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Attitude and Students' Performance in Computer Assisted English Language Learning (CAELL) for Learning Vocabulary

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Abstract

Learner performance is an important source of data for evaluating Computer Assisted Language Learning (CALL) programs and the factor that has the most influence on language-learning outcomes is a positive attitude. Therefore, the relationship between attitudes toward Computer Assisted English Language Learning (CAELL) and their performance on the English language vocabulary were investigated in this study. The attitudes of 30 Iranian postgraduate students in a Malaysian university toward CAELL were assessed via questionnaires and the effects of CALL on their performance were assessed by using vocabulary tests. The data gathered from the vocabulary tests were quantitatively analyzed using the Statistical Package for the Social Sciences (SPSS). The results showed that participants possessed positive attitudes towards Computer Assisted English Language Learning (CAELL) and their attitudes and performance were found to be positively related. The present study will provide valuable insight on the implications for integrating computers into the design of EFL course.

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Keywords: Computer Assisted Language Learning (CALL), Attitude, Performance, Self-Access Language Learning, Computer Assisted English Language Learning (CAELL).

1. Introduction

The use of technology has gained an important place in vocabulary learning and offers a great variety of

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learning possibilities through the daily improvements of Information and Communication Technology (ICT) [1]. This development of technological innovation has changed the image of the classroom in the twenty-first century [2]. This phenomenon influences education as technology is used to facilitate teaching and learning. Technology is used in almost every aspect of teaching and learning [3], and it has been known to promote and facilitate learning; therefore, a number of research have been done on the relationship between linguistic knowledge (especially English) and computer variables in vocabulary learning.

One of the best ways to evaluate a new teaching and learning medium is students' opinion on the use of technology. Students' attitude is a crucial factor that influences the decision of whether students can successfully adapt to new CALL programs. Thus, in order to understand the students' behavior toward computer language learning, an investigation into the attitudes toward the use of technology seems necessary. Since attitude is concerned with the learners' achievements, the relationship of this factor with students' English proficiency, especially learning vocabulary is also being explored in this study.

1.1. Computer Assisted Language Learning (CALL)

Over the past few decades, computer-assisted language learning (CALL) has become an important element of language learning which supports the idea that computers should be used as a medium to facilitate language learning. Levy defined computer-assisted learning as ''the search for and study of applications of the computer in language teaching and learning''[4]. In the area of language teaching and learning, this term is relatively new and an academic field focusing on language learning based on technology is being created to investigate the role of communication technologies. In the context of this research, technology used is focused on vocabulary learning especially for English language learning and this term is rebranded as Computer Assisted English Language Learning (CAELL).

In the area of using CALL programs in education, web-based learning is one of the fastest-growing areas. The new educational models have shifted from teacher-centered to learner-centered classrooms by way of well-designed and flexible environments [5], and CALL can create this independent learning environment for foreign language learners where students can acquire and practice a new language [6]. According to Crystal [7], using multimedia technology in teaching English as a foreign language can help the learners increase their independence and solve some of the difficulties experienced in a traditional classroom [7]. In other words, the computer provides an opportunity for learners being less dependent and gives them more freedom to experience learning on their own in a natural or semi-natural settings [8]. Therefore, CALL provides highly interactive and communicative support for learning and teaching English skills.

Through the wide-spread influence of technology on education, issues related to different aspects of computers and human interface have also gained attention over the past decades [9]. There is an increasing interest in discovering the relationship between language ability and computer use for educational purposes. Therefore, it is believed that a great deal of attention should be devoted to psychological impacts such as attitude, opinion, motivation, anxiety, etc. According to Morriset al. [10], both students' positive and negative reactions are reflected in attitude, which can be considered as strong predictors of behavioral intentions [11-13].

1.2. Learner's Attitude toward Using CALL

The learners' positive attitude toward CALL programs is the influential factor in mastering language. Many studies have investigated the relationship of learners' positive attitudes toward computers and achievement in the subject matter learned and the use of technologies [14-16]. The most of them have shown that there is a strong and favorable attitude toward using computers for learning language

Additionally, accepting and utilizing new instructions using also depends on the learners' opinion. Almahboub [17] indicated that a very important indicator of students' adaptation of a new technology for long life learning is a learner's attitude [17]. According to Lasagabaster and Sierra [18], when evaluating CALL

programs, the learner's attitude should be considered [18]. They conducted a research and compiled students' opinions and perceptions concerning students' attitude toward CALL. It involved 59 university students through an 18-item questionnaire about the effectiveness of CALL programs. The finding drawn from the results of the study is that the students considered CALL programs as complementary tools in language learning. They found that CALL programs created a less stressful environment for students, and learners had a positive attitude toward using CALL.

Moreover, students' proficiency affects learners' opinion towards using computers. One of the main factors that influenced the learners' positive and negative attitude toward using CALL is the time spent using computers. Positive learner attitudes toward the use of computer technology depended on opportunities and training, which were provided for users of the technology [19-23]. Students' level of attitude toward computer aid instruction depended on total hours per day or weeks spent working with it [24]. And Balogluand Cevik [9] said that more experience in using computers increases the level of self-confidence and self-efficiency and decreases the level of computer anxiety [9].

On the other hand, many institutions and teachers have a negative attitude toward using CALL and do not agree with the integration of CALL into EFL/ESL classes. These phenomena somehow depended on experienced or inexperienced users. For example, Min [25] conducted a research to examine the attitudes of 603 Korean adult students toward computers in English as a foreign language classroom [25]. The results showed that Korean language learners did not have a positive attitude toward using CALL. Their lack of previous learning experience with computers was one of the reasons for these findings.

Negative attitudes toward integration of CALL into EFL curriculum caused resistance to the use of computers. Some people may not accept it because they believe that integrating CALL requires more time and commitment. The teachers also asked questions related to the effectiveness of utilizing technology in language teaching and learning, and they believe that using CALL may limit development and threaten language teaching.

1.3. The Learner Performance toward Using CALL

Learner performance is an important source of data for evaluating CALL programs. According to Chapelle [26], the first level of evaluation is evaluating the CALL program; the second is evaluated teacher's activity, and the third is evaluating learner performance [26]. In fact, the learners' actions and the way of interacting with a program is a good predictor of the learning outcome. According to Maa and Keelly [27], learners do not possess good learning ability and do not have efficient learning strategies, but they can acquire these skills [27]. Therefore, it is impossible that learners could become good learners without any help.

In order to train learners to participate in language activities, some rules should be designed to control and limit them to what they do instead of giving them complete freedom, which is against the learning goals of the program. Therefore, user activity should be restricted to some degree and in order to achieve this goal computer technology should be integrated into all designs.

Given the importance of identifying students' attitudes towards computer-assisted language learning learning English vocabulary, this study investigated Iranian academic students' attitudes towards the English language besides examining their performance for learning English language vocabulary. The scarcity of studies on students' attitudes on academic English specifically vocabulary, in Iran is a motivating factor driving the present study.

2. Method

2.1 Participants

30 respondents were invited based on random sampling method to participate in the study. "A simple random sample is one in which each and every member of the population has an equal and independent chance of being selected, and it is the best way yet devised to obtain a sample representative of the population of interest" [28] and "for experimentation and casual comparative studies, we recommended a minimum of 30 individuals selected." Therefore, 30 selected participants studying in Intensive English Course (IEC) were collected. The respondents English level was Intermediate level because these international students did not have a minimum TOEFL score of 550 (or 79 IBT) or an IELTS band score of 6.0 and they were required to to attend an Intensive English Course (IEC) offered by the university. The average age of the respondents is 23 years old.. The questionnaires of attitudes were given at the end of the 8 weeks whereas the Pre-test was given in week 1 and post-test was conducted in week 8.

2.2. Instruments

In the study, a set of attitude questionnaires was distributed to the respondents. Participants' attitude toward using Computer Assisted Language Learning was evaluated by the eighteen items in the questionnaire. Besides the the questionnaires, the results of pre and post-test on vocabulary performance were also analyzed.

2.2.1. Attitude questionnaire

After an extensive reading of the literature on learners' attitude toward using CALL and taking the Iranians' EFL teaching situation into careful consideration, the researcher adopted the questionnaire designed by NoorZainab [29] in the study on "students' attitude toward using CALL" as the second part of questionnaire for this study. The data were collected over a period of eight weeks in which the participants took vocabulary tests in the form of pre-test and post-test. The vocabulary pre-test was conducted at the beginning of the class to evaluate participants' knowledge of vocabulary. Marks were given based on the participants' answer to the questions, each question in parts A, B, C and D having a value of 1 mark.

2.2.2. Vocabulary test

A pre-test and post-test will be conducted to evaluate the students' achievement in English vocabulary learning. In order to obtain reliable results, the pre-test and post-test were suggested to be identical (refer to Appendix A). The test comprised of four parts. Part A featured multiple-choice questions whereby participants must first understand the meaning of a given word and then find a word substitute for it. These exercises evaluated the range of participants' vocabulary knowledge and also their knowledge of synonyms. In Part B, the participants were asked to answer the fill in the gap style questions by choosing an appropriate word to complete each sentence. In this exercise, the participants' ability to find suitable words based on each sentence was tested. In part C tested word formation and participants were asked to put the correct word forms in the blanks. In this part, participants had to find a suitable form of the word for each sentence based on the statements. This question evaluated the participants' ability to form words based on the situation. And in part D, a Cloze test examined the participants' word recognition. Participants had to fill the blanks using appropriate words based on the meaning of the passage. Finally, the score of pre-test and post-test was compared, by a student using t-test to see any changes in the vocabulary performance of participants in relation to their attitudes towards CALL.

2.4. Treatment

Treatment was started after the pre-test had been carried out. During treatment, the participants learned vocabulary using websites. The websites that were used as treatment activities were Go4English.com, Englishvocabularyexercises.com and Englishlearner.com (refer to Appendix B). The participants were asked to do the vocabulary activities by using three selected websites over a six week period. Each section carried out in the self-access classes. In week eight, after all treatments had been done, a post-test was given to the participants to complete. Results obtained from the pre-test and post-test were compared to see whether there were any differences. To confirm the reliability of the result of treatment, a student t-test was conducted. Any changes in the performance of their understanding and usage of vocabulary were taken into consideration for the participants' performance.

3. Results

In order to find answers to the research question, one sample t-test, and correlation method was used.

3.1 Attitude using CALL

Descriptive statistics were applied to explore the respondents' attitude toward the use of computers to learn English language vocabulary. The proposed questions of the questionnaires comprised of 18 questions and related to the attitude of the students. The students were asked to tick an appropriate answer according to the level of agreement (i.e. 1- Strongly Disagree; 2- Disagree; 3- Neutral; 4- Agree, 5- Strongly Agree). The percentage of respondents' response to each attitude question was calculated.

The results are presented in Table 1.

Table 1: Respondents' attitude Using Computer to Learn English Language Vocabulary

No.	Statement	SD	D	N	A	SA
1	I like to use the educational websites to learn English language vocabulary.	3.3	3.3	3.3	53.3	36.7
2	The educational websites are useful for learning English language vocabulary.	-	3.3	13.3	56.7	26.7
3	It is interesting to use educational websites to learn English language vocabulary.	-	6.7	13.3	56.7	23.3
4	The use of educational websites to learn English language vocabulary is fun.	-	16.7	23.3	43.3	16.7
5	It is effective to use the educational websites to learn English language vocabulary.	3.3	13.3	6.7	63.3	13.3
6	The provided educational websites are suitable for my level.	-	20.0	33.3	40.0	6.7
7	I like the use of educational websites in learning English language vocabulary because of the varieties of provided exercises.	-	10.0	23.3	46.7	20.0
8	I like the use of educational websites in learning English language vocabulary because of the huge amount of vocabulary exercises.	3.3	10.0	30.0	46.7	10.0
9	I like the use of websites in learning English language vocabulary because of the speed of in getting feedback for the exercises.	3.3	16.7	20.0	40.0	20.0
10	I like the use of websites in learning English language vocabulary because of the feature of websites, such as color, graphic, animation and layout.	3.3	10.0	40.0	40.0	6.7

11	I hope the English teacher will provide more educational websites to learn English language vocabulary.	6.7	13.3	10.0	53.3	16.7
12	I am able to gain more knowledge about the lesson taught in English.	3.3	6.7	30.0	43.3	16.7
13	The use of educational websites enables me to understand the English lesson better.	6.7	10.0	26.7	50.0	6.7
14	I do not like to use educational websites in learning the English.	20.0	40.0	20.0	16.7	3.3
15	The use of educational websites in learning language vocabulary is boring.	13.3	43.3	16.7	23.3	3.3
16	The use of educational websites in learning language vocabulary is a waste of time.	26.7	43.3	6.7	20.0	3.3
17	The use of educational websites in learning language vocabulary is difficult.	13.3	46.7	23.3	16.7	-
18	The use of educational websites in learning language vocabulary does not help me to understand better on the topic taught.	16.7	43.3	20.0	16.7	3.3

Table 1 shows the students' attitude toward the use of computers in learning the English language vocabulary. Based on the results, 53 percent of the respondents like to use educational websites to learn English language vocabulary; they stated that the educational websites were useful, interesting and fun. Sixty three percent of the respondents agreed with the statement that "The use of educational websites in learning English language vocabulary is effective." Based on the statement of using computers to help the respondents to increase their English vocabulary, about 40 percent of the respondents were satisfied with the variety and the amount of vocabulary exercises while just 10 percent of them disagreed. The overall mean of attitude questionnaire was calculated to evaluate the respondents' overall attitude. The results are shown in Table 2.

Table 2: The Overall Mean of Attitude Questionnaire

n.	30
Mean	3.63
Median	3.72
Mode	3.72
Std. Deviation	0.56
Minimum	2.22
Maximum	4.56

The questionnaire aimed to investigate the respondents' attitude toward computers as an instructional tool to learn English language vocabulary. According to the statistical results, the maximum score on the questionnaire was 4.56 and the minimum score was 2.22; the result indicated that the overall mean of the 30 respondents was 3.63. The score is more than 3, which shows that the respondents possessed moderately high attitude toward using computers as an educational tool to learn English language vocabulary.

3.1 Performance Using CALL

The researcher conducted a pre-test and post-test to examine students' performance toward using computers as an educational tool to learn English vocabulary. Table 3 shows the data obtained from the respondents' pre-test and post-test. It is based on the vocabulary test given to the students at the beginning and at the end of the study. There were 30 respondents who answered the pre-test and post-test which had 4 sections: Section A, B, C and D. The marks are out of 60.

Table 3: Pre-test and Post-test Result

No.	Pre-test / 60	Post-test / 60	Differences pre-test & post-test
Student 1	46	47	1
Student 2	36	31	-5
Student 3	34	47	13
Student 4	32	49	17
Student 5	39	48	9
Student 6	36	34	-2
Student 7	47	52	5
Student 8	31	44	13
Student 9	36	47	11
Student 10	31	45	14
Student 11	36	44	8
Student 12	37	49	12
Student 13	26	39	13
Student 14	37	47	10
Student 15	35	42	7
Student 16	28	50	22
Student 17	32	43	11
Student 18	29	36	7
Student 19	10	16	6
Student 20	32	47	15
Student 21	29	39	10
Student 22	39	47	8
Student 23	34	45	11
Student 24	33	42	9
Student 25	38	48	10
Student 26	19	32	13
Student 27	37	45	8
Student 28	35	48	13
Student 29	29	38	9
Student 30	40	51	11

An overview of Table 3 shows the 30 respondents' pre-test grades are in the first column, and the respondents' post-test grades are in the second column. In this Table the improvement of grades is so obvious in the second column, but for more precise results the differences between post-test and pre-test are shown in the third column. The differences pre-test and post-test started from -5 to 22; it means that the post-test of one of respondents is 5 marks less than pre-test, or the post-test of other respondents are 22 marks more than his/her pre-test.

However for reliable and for more accurate results, a paired-samples t-test was conducted to evaluate the impact of using computers on students' scores and comparing the mean scores for the respondent's score on two different occasions of pre-test and post-test. The analysis of T-test has shown that whether the training has an impact on students' achievement. The results from one-sample t-test at revealed that participants showed significant positive performance towards CALL [M=33.76, SD=7.05, t(29)=10.38, p<.0005] (Table 4).

Table 4: Paired Sample t-test

	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference Lower	Upper			
Pair 1 Pretest-Posttest	-8.96667	4.73056	.86368	-10.73309	-7.20025	-10.382	29	.000

In the table labeled Paired Samples Test you need to look in the final column, labeled Sig. (2-tailed)—this is your probability value. If this value is less than.05 (e.g. .04, .01, .001), then you can conclude that there is a significant difference between your two scores. In the example given above, the probability value is.000. This has actually been rounded down to three decimal places—it means that the actual probability value was less than .0005. This value is substantially smaller than our specified alpha value of .05. Therefore, we can conclude that there is a significant difference in the Fear of Statistics Test scores at pre-test and at post-test. The t-value is 10.382, and the degree of freedom is (df=29). Therefore, the use of on-line instruction increased the range of respondents' English language vocabulary.

3.2 The Relationship between Attitude and Performance Using CALL

In order to determine the effects of variables on student performance towards CALL, correlation methods such as cross-tab and the chi - square method were conducted. The chi-square test is used when you wish to investigate the relationship between two categorical variables to determine whether two categorical variables are related. It compares the frequency of cases found in the various categories of one variable across the different categories of another variable. The summary of the Chi-square results is presented in Table 3. The test statistic was significant at the 0.05 level of significance (Sig. (2-sided) = 0.035; p=0. 000).

Table 3: Chi-Square Tests

`	**Value**	**df**	**Asymp.Sig. (2-sided)**
Pearson Chi-Square	8.620	3	.035
Likelihood Ratio	7.716	3	.052
Linear-by-Linear Association	.558	1	.455
N of Valid Cases	30		

a. 6 cells (75.0%) have expected count less than 5. The minimum expected count is .13.

The associated significance level is .035. To be significant the Sig. value needs to be .05 or smaller. In this case the value of .035 is smaller than the alpha value of .05, so we can conclude that our result is significant.

4. Discussion

The purpose of this study was to investigate the effects of attitude on students' performance in computer assisted language learning in learning to support English language vocabulary based on a sample of Iranian EFL students. The data findings gathered from questionnaire, pre-test and post-test were analyzed. Based on the statistical analysis, several expected results were achieved. It was found that the respondents possessed intermediately high attitude toward the use of computers as an instructional tool to learn a language. There was a statically significant difference in students' attitude toward using computers in the performance of the students.

This study proposed some worthy findings in terms of students' attitude toward the use of computers in language learning. The results showed that the students are eager to use educational websites in learning. Most of the students reported generally positive attitudes towards computers and stated that computers make their learning easier and enjoyable. Most of the findings discussed above conformed to the study of [18].

Learners' performance is an important source of data for evaluating CALL programs. The result of T-test data analysis has shown that the students are more willing to try out computer technology recourses in their language instruction. The result of T-test showed that students' vocabulary increased significantly after using computers in their learning. This interpretation is also supported by findings in the literature [30, 31].

The final finding revealed that two variable of the study (i.e. Students' attitude and performance) has a significant role toward the use of CALL. It showed that students' attitude has strong effects on their performance in learning vocabulary in language lessons. It means that if the attitude of students increases, they would be inclined to learn a language and particularly vocabulary.

5. Conclusion

This study investigated the relationship between attitudes toward computer assisted language learning (CALL) and their performance to learn English language vocabulary. The participants were equipped with computer facilities in order to facilitate their learning specifically, English vocabulary. The participants' attitudes and vocabulary performances were collected through two instruments comprising attitude questionnaire and vocabulary tests.. The gathered data were analyzed with the Statistical Package for the Social Sciences (SPSS) and the results have shown that there is a positive relationship between students' attitude and their performance toward CALL to learn English language vocabulary. The results of the study would provide curriculum designers and CALL users with ways to promote the students' attitude that could lead learning language effectively.

The students' positive attitudes toward the use of computers in learning vocabulary, and the relationship of their attitude and performance should be designed and extended to investigate gender differences or age differences in the use of CALL programs and the relationship of these factors with achievements.

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